

Application No. 09/889,053  
Docket No. 7379MLS  
Response dated April 3, 2007  
Reply to Office Action of January 3, 2007  
Customer No. 27752

### AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A method of determining an amino acid sequence of a polypeptide or peptide comprising the steps of:

(a) providing ~~[[the]]~~ at least one polypeptide, wherein the polypeptide comprises at least one N-terminus;

(b) providing a disulfonic acid or sulfonic acid~~[[;]]~~ covalently bonded to the N-terminus of said polypeptide or the N-terminus of at least one peptide thereof;

(c) ~~adding the sulfonic acid to the polypeptide, wherein said step produces a derivatized analyte~~ derivatizing said N-terminus of said polypeptide or said N-terminus of at least one peptide of said polypeptide with one or more disulfonic or sulfonic acids covalently bonded with said polypeptide or peptide; and

(d) analyzing said derivatized analyte using a mass spectrometric technique.

2. (Previously presented) The method recited in claim 1, wherein the mass spectrometric technique used is MALDI PSD mass spectrometry; or electrospray ionization tandem mass spectrometry.

3. (Canceled)

4. (Canceled)

5. (Canceled)

6. (Canceled)

7. (Canceled)

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8. (Withdrawn) A kit for use in determining the amino acid sequence of a polypeptide characterized in that it comprises:

(a) one or more acidic moiety reagents providing one or more acidic moieties having pKas of less than 2 when coupled with the polypeptide or one or more peptides of the polypeptide; and

(b) means for derivatizing the N-terminus of the polypeptide or the N-termini of one or more peptides of the polypeptide with one or more acidic moiety reagents.

9. (Withdrawn) A kit according to Claim 8 characterized in that the means for derivatizing comprises one or more containment devices.

10. (Withdrawn) A kit according to Claim 9 characterized in that it further comprises one or more digestion aids.

11. (Canceled)

12. (Previously presented) The method of claim 1, wherein said sulfonic acid comprises acid moieties chosen from 2-sulfoacetyl moiety, 3-sulfopropionyl moiety, 2-sulfobenzoyl moiety, and combinations thereof.

13. (Canceled)

14. (Canceled)

15. (Canceled)

16. (Previously presented) The method of claim 1, wherein said polypeptide is digested or cleaved to form at least two peptides.